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which makes the individual the source of activity, and therefore reasonably and justly responsible for his conduct, is held to be a matter of individual opinion. The will is finally asserted to be "the conscious selection of the most appropriate reaction to circumstances, and the voluntary activity thereby involved." The book concludes with a short treatise on the factors of the insanities, their causation and character; the relation of genius to insanity; the effects of heredity, intemperance, and bodily disease; religion, age, and environment. The closing pages deal with hypnotism.

Considered as a whole, Dr. Hyslop's book is a very desirable addition to a philosophical or psychological library, and cannot fail to be useful to the student of mental medicine. It enters a field of speculative and theoretical knowledge that has been much traversed by eminent thinkers, but about which there is still a great deal to be learned. It deals also with the practical side of psychology in endeavoring to explain mental operation under diseased conditions of the brain, and points out the special significance of many symptoms commonly observed in the insane. The author has drawn liberally from the works of other writers, often advantageously, but has, we think, somewhat obscured the text by the frequency and extent of his citations. The book, however, is well arranged, and contains a great deal of valuable matter, and deserves hearty commendation.

CHARLES G. WAGNER.

*De la contingence des lois de la nature.* Par ÉMILE BOUTROUX. Paris, Félix Alcan, 1895.—pp. 171.

*De l'idée de loi naturelle dans la science et la philosophie contemporaines.* Cours de ÉMILE BOUTROUX, professé à la Sorbonne en 1892–1893. Paris, Félix Alcan, 1895.—pp. 144.

The first-named work is a reprint of the author's thesis for the doctorate presented to the Sorbonne in 1874; the second contains the lectures delivered by him on essentially the same subject nearly twenty years later. The intervening years have matured the author's thought and improved his powers of exposition, but they have not materially affected his views on the subject under discussion. Both works have the same aim, the vindication of the idea of freedom as spontaneous activity of will, by the proof that the laws of nature, particularly the mathematico-mechanical laws, which are often supposed to imply necessity and determinism, are contingent. The later work, however, is by no means a mere reproduction of the earlier. The argument is the same, but it is more definitely connected with the actual historical development of the fundamental conceptions of modern science; the argument in the dissertation is more abstract. On the other hand, it is in the later work that the author shows more clearly the connection of his views on the contingency of natural law with his metaphysics.

Unfortunately, the important conception of Contingency is not precisely defined. We are familiar with the conception of the contingency of fact, less familiar with that of the contingency of law. Indeed, we commonly suppose that a law of nature, if it be really a law and not merely a hypothesis which for the time being is regarded as such, is universal and necessary. But necessity is not opposed to contingency, unless it be absolute; in the case of hypothetical necessity, necessity and contingency are aspects of the same fact. And absolute necessity is a patent contradiction. To say, then, that a law of nature is necessary, either implies no more than that it is a fact, or implicitly affirms its relativity in its dependence on conditions, its lack of self-sufficiency, in a word, its contingency. As to the universality of law, this again is not opposed to its contingency, unless it be absolute universality. A law which holds universally only of a part or aspect of the universe, cannot be held to be the determining principle of the whole. The contingency of natural law is thus a clear and cardinal doctrine in a philosophy which holds that the truth is the whole, and even a philosophy which holds that truth is not the whole can well maintain the contingency of the truths of nature, in the sense that they are relative to, and conditioned by, the whole truth, or at least in the sense that they are subject to the conditions which the real world supplies for their application.

M. Boutroux, in rejecting Absolute Idealism, of course makes no use of the Hegelian dictum that the truth is the whole, and, although a large part of his argument is based on the relativity of the laws of nature (according to which what is true of one aspect or part of the world cannot be straightway assumed to be true of another, is in fact untrue when thus universalized), his view of the contingency of natural law is still more radical, and amounts, if we understand him, to this, — that no law establishes necessity of connection even in its own department; on the contrary, that every law, however universal its statement, is invested with something of the contingency of a particular which is simply given, and cannot be deduced purely *a* *priori*, or be made perfectly intelligible. In a chapter on Necessity, the first in *De la contingence des lois de la nature*, the criterion of the necessity of a relation is said to be the possibility of referring it analytically to a synthesis subjectively and objectively valid. The argument of the entire work is that there is no principle from which such deduction is possible. No law of nature is necessary *a priori*, and the necessity which reigns in fact is found to be abstract and not the expression of the concrete nature of things. And in the *Loi naturelle* the contention throughout is that, as we go from one department of science to another, from the logical to the mathematical, and thence to the mechanical, the physical, the chemical, the biological, and so on to the psychological and sociological, we find with each advance new elements not deducible from the preceding, new laws neither intelligible in themselves nor capable of making intelligible, in any ultimate sense, the way in which phenomena are determined. The only perfectly intelligible and therefore clearly necessary laws, are the so-called primary laws of thought. But those tell us nothing as to the connections of fact,—as to whether, for example, any real thing contains identity without contradiction. The other logical laws, the laws of conception, of judgment, and of the syllogism, involve such unintelligibilities as the relations of unity and multiplicity, of predicate and subject, of the implicit and the explicit; and the extent of their validity in the real world is in all cases subject to the empirical facts. But if logical laws do not determine the relations of objects, still less do natural laws. Natural law is never a constitutive principle *a priori*. It does not follow, however, that its origin is merely empirical. It is a product of the mind in its intercourse with experience. It "represents the character we have to attribute to things in order that they may be expressed by the symbols at our disposal." And although it turns out that certain phenomena lend themselves to the exigency of our intellectual demands, so that, for instance, the notion of mechanical law dominates, at least as regulative, all scientific research, yet this is a very different thing from saying that we have perfect insight into the necessity of mechanical law, or that mechanical law absolutely dominates the nature of things (*L. N.*, p. 38).

How far the author's idea of the contingency of law carries him appears in the fact that he impugns even the supposed necessity of mathematics. Not only does science involve elements "brute and impenetrable," like that of infinity, but others are possible. The very constitution and progress of the mathematical sciences are due to the invention of axioms and definitions which allow the greatest possible continuity in the development of the demonstrations. How can we affirm that principles thus assumed for the perfecting of a method are all necessary and perfectly intelligible? (*L. N.*, p. 137.) And yet we cannot say that they have no objective validity, only that the degree of their validity cannot be determined *a priori.* We postulate a correspondence between that which satisfies human intelligence and the nature of things, because we assume that man is not a monster in the world; but how far this correspondence goes can only be decided by an examination of the concrete laws of experience (*L. N.*, p. 27). The same thing holds with regard to the principle of causation in mechanical physics. The principle cannot establish necessity of connection *a priori;* science has nothing to do with necessity of connection, but only with invariable relation and quantitative identity of condition and consequent. It cannot even establish a *de facto* necessity; if things, though able to change, do not change, the relation thought would be invariable none the less. Moreover, variations may exist which elude our measurement. And when, going beyond quantitative relations, we take the qualitative differences of phenomena into account and consider how often, from the point of view of quality, the effect is disproportionate to the cause, we are bound to admit that nowhere in the real world of concrete existences is the principle of (mechanical) causality rigorously applicable (*Cont.*, p. 26).

The student of Kant will be struck by the contrast between Boutroux's and Kant's account of the origin and validity of mathematics and the causal principle. The latter regards them as synthetic judgments *a priori*, and because constitutive of experience necessarily valid of its objects; the former asserts that they are neither *a priori*, in the sense of being deducible from the pure intelligence, nor are they constitutive, in any real sense, of objects. There is unquestionably here a fundamental difference in the point of view. And yet it seems possible, without any very great distortion, to tone down the difference so as to make it appear inappreciable. For with Kant, too, the principles of mathematics are not deducible from the pure intelligence, since they require the 'intuitions' of space and time, and these intuitions as 'given' constitute, in so far, an element of contingency. Nor is there any reason why Kant should not allow the further contingency connected with the artifices, *e.g.*, $\sqrt{-1}$, whereby mathematical science is developed. Even the given space-intuition does not preclude the possibility of non-Euclidean geometry, unless we assume that not only space but also our conceptions of space are forever unalterable. And in regard to the causal principle, although it is held by Kant to establish everywhere in nature immutable relations of necessity, still the 'necessity' spoken of is not absolute, and the principle itself seems at times to amount to no more than the reasonable postulate that, *if* an order of succession is to be *regarded* as objective, the relations of its members must be conceived as determinate. Is not this but another way of saying what M. Boutroux says at the close of his later volume, "What we call the laws of nature are the totality of the methods which we have discovered for assimilating things to our intelligence"? M. Boutroux adds, "and making them subservient to the accomplishment of our volitions." For, like Kant, it is in the practical sphere that he finds the inner kernel of reality and the meaning of the contingency of experience as it appears under the categories of the understanding. The understanding cannot grasp reality. The contingency of its laws makes it possible to trust the sentiment of freedom, but the positive metaphysical construction starts from the practical consciousness of ideals of action. It is thus that in the last part of the *De la contingence des lois de la nature*, M. Boutroux develops a metaphysics of freedom, of which it should be praise enough to say that, following in the line of Kant but more dogmatic in results, it reminds us not a little, in essential outlines, of Lotze.

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